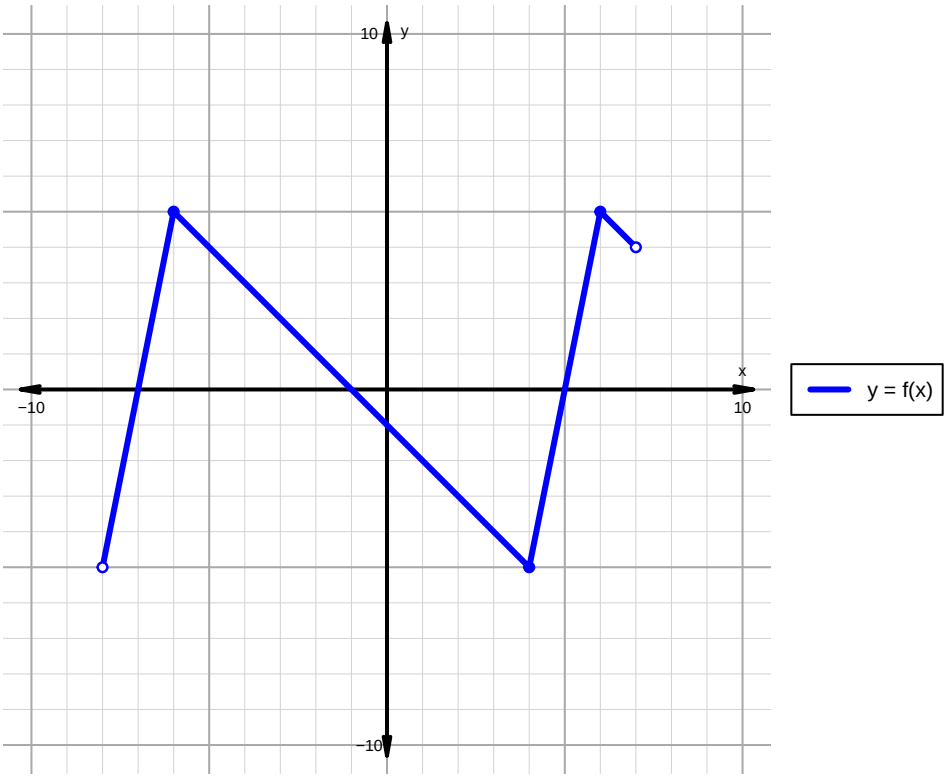
Name: Date:

Intervals, Transformations, and Slope Solution (version 36)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-7,-1)\cup(5,7)$
Negative	$(-8,-7)\cup(-1,5)$
Increasing	$(-8,-6)\cup(4,6)$
Decreasing	$(-6,4)\cup(6,7)$
Domain	$(-8,7)$
Range	$(-5,5)$

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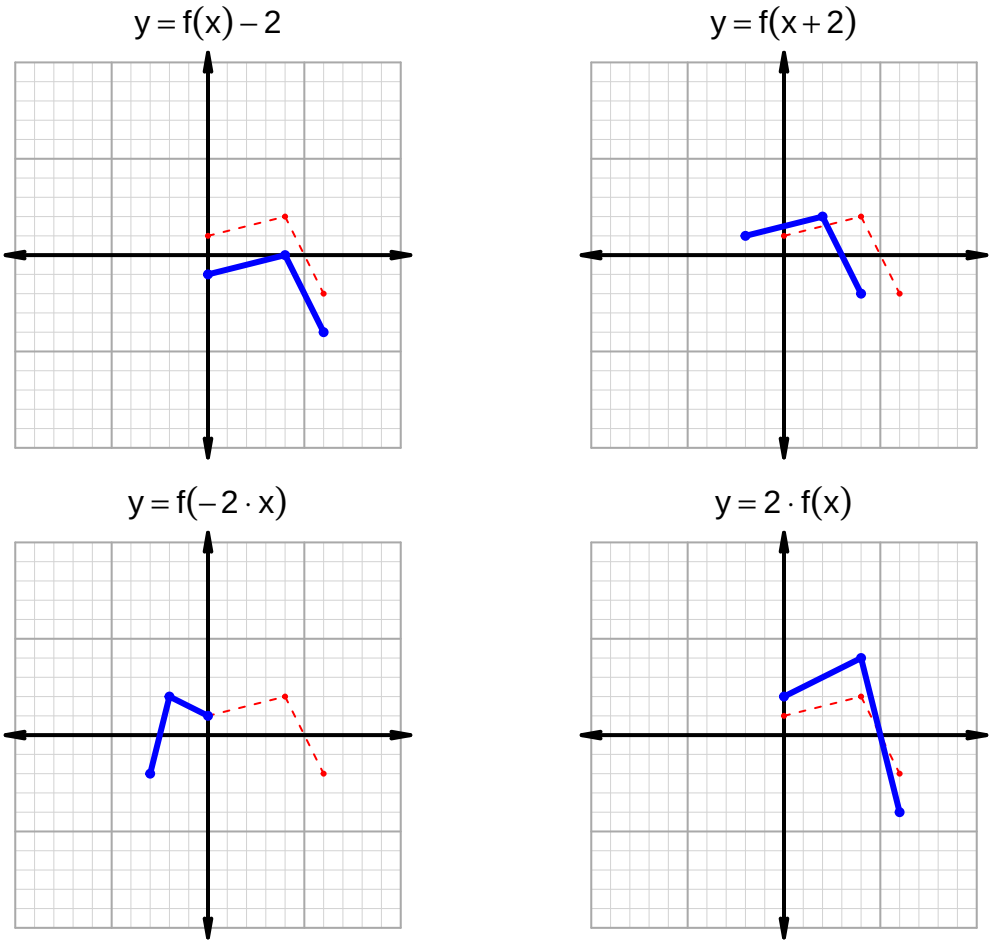
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. Please add the indicated transformed graphs indicated by the equations below using a solid line.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 29$ and $x_2 = 53$. Express your answer as a reduced fraction.

x	$g(x)$
29	49
49	53
53	81
81	29

$\frac{f(53)-f(29)}{53-29} = \frac{81-49}{53-29} = \frac{32}{24}$

The greatest common factor of 32 and 24 is 8. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{4}{3}$$